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ABSTRACT

This publication from the Department of Defense Education Activity (DoDEA) is designed to inform parents about the department's Grade Four curriculum standards in four major areas: language arts/reading, mathematics, science, and social studies. The integrated language arts/reading standards enable students to differentiate fact from opinion and form generalizations. Students can choose reading as a means of solving problems and expanding interest and knowledge, using a variety of texts, including books, magazines, newspapers, and the visual media across the curriculum. Students will use note-taking strategies and will be able to formulate hypotheses. They will receive and respond appropriately to a range of complex instruction. Mathematics standards emphasize involving students in estimating addition and subtraction problems with 4-digit numbers, conceptualizing whole-number multiplication as a rectangle, and using equivalent ways to name fractions. Students will use counting, grouping, and displaying to compare data, compare the area of shapes with the same perimeter, and use special geometric terms to communicate clearly about shapes. The science standards stress the importance of using information, analyzing data, and validating experimental results. Relationships are investigated in interactions among the earth and its oceans and the earth and its atmosphere. Students will be introduced to basic principles of electrical energy and to the concept of current. The social studies standards require students to explore regions of the United States and the world. Historical, economic, and geographical concepts expand discussions on national topics, global issues, supply and demand, and the role of technology and geographic patterns. (KB)

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GRADE FOUR 4

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A PARENT'S GUIDE

Department of Defense Education Activity

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PS 030033

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Message From The Director

Dear DoDEA Parents:

DoDEA is committed to providing your children with the best education possible. One of the ways that we intend to accomplish this is with an effective curriculum of high quality. DoDEA has developed rigorous curriculum standards aligned with national guidelines and with the standards of the finest school systems throughout the Nation. Even with the most rigorous curriculum standards, it is the understanding and support of parents that will help make our schools and our students successful. At DoDEA, we want parents to know what educational standards have been established in the four major subject areas of Language Arts/Reading, Mathematics, Science, and Social Studies.

This publication is designed to inform you about what your children are learning in these four major curriculum areas for this grade level. This publication provides you with samples of what students are learning and what they should know and be able to do when they complete this grade. This is only a sample of the complete curriculum standards that are used by teachers to determine instruction in the classroom. To see the entire curriculum in these four areas, consult the teacher or the school principal.

I hope that you find this publication informative in assisting us in the education of your child. Working together we can ensure your child's success now and well into the future.

Ray Tolleson
Interim Director

STANDARDS

To create a world-class education system, DoDEA has developed rigorous and demanding curriculum standards. The curriculum standards specify what students should know and be able to do. DoDEA curriculum standards are based on the content standards produced by the National Council of Teachers of Mathematics, the National Council of Teachers of English the International Reading Association, the National Research Council's National Science Education Standards and the National Council for Teachers of Social Studies.

Standards are important because they set high levels of learning and performance for all students. The standards also serve as a basis for assessment across the curriculum. They focus on what is important in each curriculum area.

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INTRODUCTION

The language arts/reading standards enable students to differentiate fact from opinion and form generalizations. Students can choose reading as a means of solving problems and expanding interest and knowledge, using a variety of texts; e.g., books, magazines, newspapers, and the visual media across the curriculum. Students will use note-taking strategies and will be able to formulate hypotheses. They will receive and respond appropriately to a range of complex instructions. The social studies standards require students to explore regions of the United States and the world. Historical, economic, and geographical concepts expand discussions on national topics, global issues, supply and demand, and the role of technology and geographic patterns.

Mathematics standards involve students in estimating addition and subtraction problems with 4-digit numbers, conceptualizing whole number multiplication as a rectangle, and using equivalent ways to name fractions. Students use counting, grouping, and displaying to compare data, compare the area of shapes with the same perimeter, and use special geometric terms to communicate clearly about shapes. Science standards stress the importance of using information, analyzing data, and validating experimental results. Relationships are investigated in interactions among the earth and its oceans and the earth and its atmosphere. Students are introduced to basic principles of electrical energy and to the concept of current.

GRADE 4

Language Arts/Reading Standards

Reading

Students explain material read at a literal level and draw conclusions. Students will:

- Find the main idea in a selection
- Read for details in a selection
- Increase vocabulary through interactions with media and technological resources
- Explain author's choice of words
- Draw conclusions
- Use contextual clues to understand words of increasing difficulty
- Increase personal vocabulary through reading experiences
- Explain material read at literal level (sequence, details, following directions)

Writing

Students engage in process writing, and use a variety of lead sentences and patterns for different purposes and different audiences. Students will:

- Use technological aids throughout the writing process as appropriate
- Employ various means of publishing final products
- Write stories with distinct sequences
- Write on directed topics
- Write from different points of view
- Use a variety of lead sentences, sentence patterns, audiences, and purposes in creating first draft
- Develop an idea into a complete piece with a distinct beginning, middle, and end

Listening, Speaking, and Viewing

Students understand the differences among fact, fiction, and inference heard. They give oral reports on events and information. Students will:

- Participate as speakers in group activities
- Give a detailed, well-organized oral account of an event
- Give detailed, well-organized oral report on information learned
- Recognize and understand words, phrases, and acronyms which are included in the military and local environments
- Discern fact, fiction, and inference heard
- Give evidence of understanding the contributions that facial expressions, gestures, and tone of voice can make to a speaker's meaning

Literature

Students understand the elements of literature; e.g., climax, resolution, theme, cultural background. Students will:

- Explain cultural differences of different types of literature
- Identify the climax and resolution of a story
- Explain story themes
- Interpret figurative language, colorful expressions, and colloquial speech
- Use specific aspects of literature to understand one's own and others' thoughts

The English Language

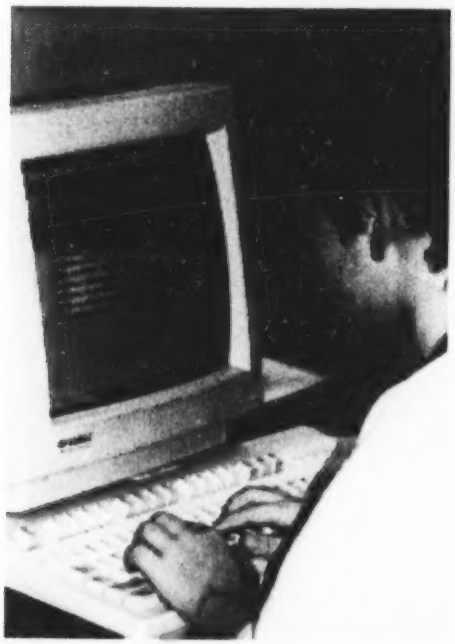
Students understand that language reflects a point of view and the cultural diversity of our country. Students will:

- Understand and respect the cultural diversities in our language
- Explain the history of selected words
- Expand use of specific words
- Understand that language, both written and spoken, reflects a point of view
- Use quotations to enhance communication
- Increase use of figurative language

Accessing and Processing Information

Students use word processing skills and access information from multimedia reference materials. Students will:

- Use parents and community members as resources for learning
- Develop and use word processing skills; e.g., create, edit, save and retrieve information
- Use simulation software that does not require one right answer
- Access information from multimedia reference materials; e.g., electronic atlas, dictionary, and encyclopedia
- Develop an understanding of the ethical use of technology generated materials



Mathematics Standards

Mathematics As Problem Solving

Students should be engaged in problem solving activities so they can show proficiency in being able to:

- Apply strategies such as acting out, making a list, drawing a picture, looking for patterns, guess and check, estimating, and working backwards
- Solve 1- and 2-step word problems involving the four basic operations

Mathematics As Communication

Students should experience numerous opportunities for communication so they can show proficiency in being able to:

- Explain problem solving steps orally and in writing
- Interpret and explain mathematics information gathered from various sources; i.e., newspapers, weather charts, sports magazines, financial newsletters, etc.

Mathematics As Reasoning

Reasoning is throughout the mathematics curriculum so students can show proficiency in being able to:

- Generate a rule from a given set of data
- Determine classification criteria from previously classified materials

Mathematical Connections

Students should have opportunities to make connections so they can show proficiency in being able to:

- Illustrate a variety of ways that math is used by the media
- Create a word problem from a story or article that has been read
- Locate points on a grid and locate areas on maps using latitude and longitude readings

Computation And Estimation

Students should develop computation and estimation skills so they can show proficiency in being able to:

- Perform addition and subtraction operations using horizontal and vertical notation
- Express multiplication and division operations with concrete materials and with symbols
- Find averages of data collected from real life situations
- Use physical models to represent equivalent fractions
- Estimate products and quotients of 2- and 3-digit numbers

Number Sense, Number Operations, and Number Relationships

Students should develop number and number relationships so they can show proficiency in being able to:

- Identify and write up to 7-digit numbers given place value models or illustrations
- Connect given symbolic representations of fractions to pictorial representations of the same fractions
- Use basic operational terms correctly: addend, sum, difference, factor, product, dividend, divisor, quotient, and multiple

Patterns, Relationships, and Functions

Students should study and explore patterns, relationships, and functions so they can show proficiency in being able to:

- Complete sequences in which there are patterns of arithmetic operations
- Construct input-output tables and express the relationship as an open sentence

Probability and Statistics

Students should experience data analysis and probability so they can show proficiency in being able to:

- Make predictions, conduct surveys, construct graphs, and compare results to initial predictions

- Identify possible outcomes of events and determine the probability of events
- Construct circle graphs showing collected data

Geometry

Students will study one, two, and three dimensional geometry so they can show proficiency in being able to:

- Use a grid to estimate areas of geometric shapes and real world objects
- Identify, describe, and draw rays, right angles, acute angles, and obtuse angles

Measurement

Students will have extensive concrete experiences using measurement so they can show proficiency in being able to:

- Estimate and determine change to be received from a purchase
- Express time in either the 12- or 24-hour time systems
- Take readings using Celsius and Fahrenheit thermometers over a period of time and chart the results

Science Standards

Inquiry Skills

Students will conduct investigations using the processes of scientific inquiry. Students will:

- Design and conduct observational and experimental investigations
- Select and use appropriate tools to measure, collect, and record data, and make observations
- Ask questions about observations and develop procedures to answer the questions

Physical Science

Students will explore the characteristics of objects, light, heat, electricity, and magnetism. Students will:

- Conduct investigations that demonstrate how matter can change into different states (examples: liquid to solid, solid to liquid, liquid to gas)
- Compare materials for their ability to conduct or insulate heat
- Design an electrical circuit to identify which materials can be used to conduct electricity

Life Science

Students will identify characteristics of organisms, their life cycles, and how they survive in their environments. Students will:

- Compare structural parts of organisms to their function (example: bird's wing-flying)
- Differentiate between learned and inherited characteristics
- Investigate how the behavior of plants and animals are influenced by changes in their environments

Earth and Space Science

Students will describe properties and changes of nonliving matter. Students will:

- Investigate the properties of air, rocks, and minerals
- Predict the local weather by using simple scientific tools to design and run a weather station
- Describe processes that create turbulent weather conditions

Science and Technology

Students will demonstrate the use of different technology designs. Students will:

- Recognize that specific technology, tools, and instruments assist humans to work efficiently or live more conveniently
- Identify a simple problem in the immediate environment and propose possible solutions
- Explore/invent/design possible solutions to the problem using small groups or whole class

Science in Personal and Social Perspectives

Students will practice safety and describe changes in environments. Students will:

- Publish and use a set of safety rules when working on science projects alone or in groups
- Categorize types of pollution and determine which ones are most threatening to living organisms

History and Nature of Science

Students will identify science as a human endeavor. Students will:

- Recognize that science is an activity that students can do
- Compare science and technology of past cultures with science and technology of today
- Identify men and women from different cultures who have contributed to science and technology (example: Dr. Rodriguez-Plant Poisons)

Social Studies Standards

Citizenship

Social studies programs should include experiences that provide for the study of the ideals, principles, and practices of citizenship in a democratic republic, so that the learner can:

- Know the principles of the democratic form of government including power, liberty, justice, equality, the rule of law, and individual human dignity
- Identify and interpret sources and examples of citizens' rights and responsibilities

Culture

Social studies programs should include experiences that provide for the study of culture and cultural diversity, so that the learner can:

- List cultural contributions of selected ethnic, regional, and racial minority groups
- Describe the influence of immigration on culture

Time, Continuity, and Change

Social studies programs should include experiences that provide for the study of the ways human beings view themselves in and over time, so that the learner can:

- Explain how neighborhoods and communities change over time
- Describe the conditions affecting population movement
- Identify political, religious, and economic factors which influence settlements of specific geographical locations

Space and Place

Social studies programs should include experiences that provide for the study of space and place, so that the learner can:

- Use geographic tools such as maps, atlases, computer data bases, and other programs
- Use a map of the United States to identify and locate physical features, states, cities, and regions
- Explain how natural resources help determine the kinds of jobs available in a particular region

Individual Development and Identity

Social studies programs should include experiences that provide for the study of individual development and identity, so that the learner can:

- Identify beliefs and values that influence one's self-concept
- Identify and describe ways regional, ethnic, and national cultures influence individuals' daily lives

Individual, Groups, and Institutions

Social studies programs should include experiences that provide for the study of the interaction among individuals, groups, and institutions, so that the learner can:

- Identify group and institutional influences on people, events, conditions, and trends
- Describe the formation of basic institutions that serve the needs of various cultural groups

Production, Distribution, and Consumption

Social studies programs should include experiences that provide for the study of how people organize for the production, distribution, and consumption of goods and services, so that the learner can:

- Explain how natural resources help determine the kinds of jobs available in a particular region
- Explain the concept of supply and demand
- Describe the various institutions that make up economic systems, (e.g., households, business firms, banks, government agencies, labor unions and corporations)

Power, Authority, and Governance

Social studies programs should include experiences that provide for the study of how people create and change structures of power, authority, and governance, so that the learner can:

- Explain the need for law and rules in a society
- Explain the role and responsibility of elected officials
- Explain the difference between rights and responsibilities in the home, school, community, Nation, and world
- Explain the concepts of civil and equal rights

Science, Technology, and Society

Social studies programs should include experiences that provide for the study of the relationships among science, technology, and society, so that the learner can:

- Explain how humans shape and adapt to their environment
- Explain how technology has changed society

Global Connections

Social studies programs should include experiences that provide for the study of global connections and interdependence, so that the learner can:

- Describe how regions are interdependent
- Show how cultural elements such as language, art, music, and belief systems can both connect people and cause misunderstandings